



US 90046A

United States Patent [19]

Fenderson et al.

[11] Patent Number: **5,990,046**[45] Date of Patent: ***Nov. 23, 1999****[54] HERBICIDAL COMPOSITIONS COMPRISING DIMETHENAMID [AND DIKETONE OR TRIKETONE HERBICIDES]**

[75] Inventors: John M. Fenderson, Kiowa, Kans.; William B. O'Neal, Buffalo Grove, Ill.; Théo Quaghebeur, Saint-Symphorien, Belgium; Karl-Christoph Schumm, Campinas, Brazil; Walter Van Loocke, Meetkerke, Belgium

[73] Assignee: Sandoz Ltd., Basel, Switzerland

[*] Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

[21] Appl. No.: 08/911,926

[22] Filed: Aug. 15, 1997

Related U.S. Application Data

[62] Division of application No. 08/467,364, Jun. 6, 1995, Pat. No. 5,716,901, which is a continuation of application No. 08/265,594, Jun. 23, 1994, abandoned, which is a continuation-in-part of application No. 08/236,732, May 2, 1994, Pat. No. 5,877,115, and a continuation-in-part of application No. 08/153,946, Nov. 16, 1993, abandoned, which is a continuation of application No. 08/019,386, Feb. 18, 1993, abandoned, and a continuation-in-part of application No. 08/152,066, Nov. 12, 1993, abandoned, which is a continuation of application No. 08/019,933, Feb. 19, 1993, abandoned.

[30] Foreign Application Priority Data

Jun. 25, 1993 [GB] United Kingdom 9313210

[51] Int. Cl.⁶ A01N 43/10; A01N 31/06

[52] U.S. Cl. 504/129; 504/134

[58] Field of Search 504/129, 289, 504/134

[56] References Cited**U.S. PATENT DOCUMENTS**

3,013,054 12/1961 Richter 260/473

4,666,502 5/1987 Seckinger et al. 71/90
4,695,673 9/1987 Heather et al. 568/310
4,789,393 12/1988 Hanagan 71/92
4,869,748 9/1989 Knudsen 71/123
4,921,526 5/1990 Lee et al. 71/86
5,006,150 4/1991 Lee et al. 71/88
5,089,046 2/1992 Lee et al. 71/108

FOREIGN PATENT DOCUMENTS

137963 4/1985 European Pat. Off. .
186118 7/1986 European Pat. Off. .
186119 7/1986 European Pat. Off. .
186120 7/1986 European Pat. Off. .
230596 8/1987 European Pat. Off. .
249150 12/1987 European Pat. Off. .
315889 5/1989 European Pat. Off. .
336898 10/1989 European Pat. Off. .
338992 10/1989 European Pat. Off. .
380 447 1/1990 European Pat. Off. .
394889 10/1990 European Pat. Off. .
461079 12/1991 European Pat. Off. .
549524 6/1993 European Pat. Off. .
WO 91/10653 7/1991 WIPO .
WO 92/07837 5/1992 WIPO .

OTHER PUBLICATIONS

Weed Control And Soil Persistence Studies With Dimethenamid In Maize, A. Rahman and T.K. James; Proc. 45th N.Z. Plant Protection Conf. 1992: 84-88.

Herbicide Composition, Kimura et al.; United States Statutory Invention Registration, Reg. No. H670, Sep. 5, 1989.

SAN 582 H—A New Herbicide For Weed Control In Corn And Soybeans, J. Harr, K. Seckinger, E. Ummel, Brighton Crop Protection Conference—Weeds, 1991, pp. 87-92.

Weed Control in No-tillage and Conventional Corn (*Zea mays*) with ICIA-0051 and SC-0774, John S. Wilson and Chester L. Foy; *Weed Technology*, 1990, vol. 4:731-738.

Primary Examiner—S. Mark Clardy
Attorney, Agent, or Firm—Alston & Bird LLP

[57] ABSTRACT

Co-application of dimethenamid and a second herbicide selected from the group consisting of [with diketone or] triketone or dione herbicides and triazine herbicides provides improved herbicidal activity.

24 [13] Claims, No Drawings

08/911,926

SUB
A2